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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,796	11/24/2003	Ching-Cheng Tsai	025697-00028	3458

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EXAMINER

FERGUSON, MARISSA L

ART UNIT PAPER NUMBER

2854

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,796

Applicant(s)

TSAI ET AL.

Examiner

Marissa L Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai et al. (US Patent 6,252,184) in view of Lu et al. (US Patent 6,550,993).

Regarding claims 1 and 7, Tsai et al. teaches keys with the two lower sides thereof being disposed with an upper fixation (71) portion respectively, scissor frames (60) disposed with an upper pivot portion and a lower pivot portion respectively (Figures 2,3 and 5), elastic contact bodies (4,41) having a contact press portion respectively, a membrane circuit board (2) having a first through hole (25) a support plate (3) having a first aperture (31), a lower fixation portion (32) and a membrane circuit board (2) being placed on top of said support plate (1).

However he does not explicitly disclose a bottom plate having a plurality of stamped nodes wherein said bottom plate being placed underneath said support plate, said stamped nodes of said bottom plate going through corresponding first apertures of said support plate respectively, said bottom plate and said support plate being riveted thereafter. Lu et al. teaches a keyboard structure that

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disclose a plurality of latches (11,11',32,32') placed underneath a plate wherein the latches go through the corresponding apertures of the plate (2) and bottom plate and support plate being riveted thereafter (Figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Tsai et al. to include a plurality of notches as taught by Lu et al., since Lu et al. teaches that it advantageous to easily assemble and disassemble the keyboard structure.

Regarding claims 2 and 11, Tsai et al. teaches a light-blocking plate (5,11) is further disposed.

Regarding claims 3 and 13, Tsai et al. teaches a membrane circuit board is consisted of an upper layer (21), a middle layer (22) and a lower layer (23) of circuit boards.

Regarding claim 5, Tsai et al. teaches a first apertures of said support plate are formed as round shape bodies (Figure 1).

Regarding claim 6, Tsai et al. teaches first apertures of said support plate are disposed with a plurality of notches respectively (Figures 1 and 1a).

Regarding claim 8, Tsai et al. teaches upper fixation portions are respectively disposed on two lower sides of said keys (Figures 2,3 and 5).

Regarding claim 9, Tsai et al. teaches scissor frames that are disposed with upper pivot portions and lower pivot portions respectively (Figures 2,3 and 5).

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Regarding claim 10, Tsai et al. teaches elastic contact bodies (4,41) that are disposed with contact press portions respectively (Figures 2,3 and 5).

Regarding claim 12, Tsai et al. teaches a support plate that is further disposed with a second aperture (31) and a lower fixation portion (32).

2. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai et al. (US Patent 6,252,184) in view of Lu et al. (US Patent 6,550,993) as applied to claims 1-3 and 5-13 above, and further in view of Demeo (US Patent 5,397,867).

Tsai et al. and Lu et al. teach the invention claimed with the exception of a black or dark printing surface being printed on top of a membrane circuit board. Demeo teaches an illuminated keyboard that prints an opaque material (Column 4, Lines 43-51) over a circuit board (22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Tsai et al. to include a dark printed layer as taught by Demeo, since Demeo teaches that it advantageous to use an opaque print surface to achieve and sustain a uniform illumination on the keyboard cover.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa L Ferguson whose telephone number is (571) 272-2163. The examiner can normally be reached on (M-T) 6:30am-4:00pm and every other (F) 7:30am-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168.


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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLF

Marissa L Ferguson
Examiner
Art Unit 2854


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